

### REMARKS

Claims 23-26, 28-33, and 35-45 were pending, and were rejected by the Examiner. Claim 23 has been amended to recite a protein C or activated protein C polypeptide that contains a modified GLA domain having the amino acid sequence of SEQ ID NO:1 with one, two, three, or four substitutions at specific positions. Claims 29 and 43 have been similarly amended to recite protein C or activated protein C polypeptides containing modified Gla domains that have the amino acid sequence of SEQ ID NO:1 with, respectively, three or four substitutions at specified positions. In addition, claims 23-26, 28-33, and 43-45 have been amended such that the numbering of the modified positions within the GLA domain corresponds to the numbering of SEQ ID NO:1 rather than to the Factor IX sequence. Support for these amendments can be found in Applicant's specification at, for example, page 8, lines 17-21, page 8, line 25 to page 9, line 5, page 10, lines 5-19, page 37, line 14 to page 43, line 6, and in Figures 12, 13, and 14. Finally, the dependency of claims 31-33 and 45 has been amended, and claim 45 also has been amended to correct a spelling error.

Claims 35-42 have been canceled, and claims 46-55 have been added. Claim 46 recites that the protein C or activated protein C polypeptide of claim 23 further contains a substitution at position 32. Claim 47 recites that the protein C or activated protein C polypeptide of claim 29 contains a glycine at residue 11, a glutamic acid at residue 32, and an aspartic acid at residue 33. Support for claims 46 and 47 can be found in the specification at, for example, page 8, line 25 to page 9, line 5, page 10, lines 12-19, and page 37, line 14 to page 43, line 6. Claims 48-55 correspond to canceled claims 35-42, but refer to all of the presently claimed polypeptides (i.e., the protein C and activated protein C polypeptides recited in claims 23-26, 28-33, and 43-47). No new matter has been added.

In light of these amendments and the following remarks, Applicant respectfully requests reconsideration and allowance of claims 23-26, 28-33, and 43-55.

### Drawings

The Examiner objected to the drawings. Formal drawings are submitted herewith.

### Rejections under 35 U.S.C. § 112, second paragraph

The Examiner rejected claims 23-26, 28-33, and 35-45 under 35 U.S.C. § 112, second paragraph, as being indefinite. Specifically, the Examiner stated that the claims are indefinite as to what sequences are considered to have substitutions because no reference point has been provided. For the purposes of the office action, the Examiner considered and searched sequences relative to those set forth in SEQ ID NO:1 and SEQ ID NO:2, which correspond to human protein C and bovine protein C, respectively. The Examiner also noted that since the position numbering for protein C is adjusted to correspond to the numbering for factor IX, the Examiner searched sequences having amino acid substitutions at positions 10, 11, 28, 32, and 33 of protein C, which correspond to positions 11, 12, 29, 33, and 34 of factor IX.

Claims 23, 29, and 43 have been amended to recite a protein C or activated protein C polypeptide having a modified GLA domain that contains the sequence of SEQ ID NO:1 with a specified number of substitutions at specific positions. Furthermore, claims 23-26, 28-33, and 43-45 have been amended to recite that the substitutions are at positions 10, 11, 28, 32, and/or 33, thus corresponding to SEQ ID NO:1 rather than to the sequence of the Factor IX GLA domain. Claims 35-42 have been canceled.

In light of the above, Applicant respectfully requests withdrawal of the rejection of claims 23-26, 28-33, and 43-45 under 35 U.S.C. § 112, second paragraph.

### Rejections under 35 U.S.C. § 102

The Examiner rejected claims 23-26, 29-30, and 40-41 under 35 U.S.C. § 102(b) as being anticipated by Hashimoto et al. (EP 0 354 504). Specifically, the Examiner cited Hashimoto et al. for teaching a protein C hybrid polypeptide wherein the Gla domain has been substituted with the Gla domain of bovine protein C. The Examiner also rejected claims 23-26, 28-33, 35-41, and 43-44 under 35 U.S.C. § 102(b) as being anticipated by Iwasaki et al. (EP 0 296 413). The

Examiner characterized Iwasaki et al. as teaching a human protein C hybrid polypeptide wherein the Gla domain has been substituted with the Gla domain of factor X. Finally, the Examiner rejected claims 23-26, 28-30, 35-39, and 40-44 under 35 U.S.C. § 102(e) as being anticipated by Smirnov et al. (U.S. Patent No. 5,837,843). The Examiner cited Smirnov et al. for teaching a protein C chimeric polypeptide wherein the Gla domain has been substituted with the Gla domain of prothrombin.

Applicant respectfully traverses the Examiner's rejections under 35 U.S.C. § 102. A single prior art reference anticipates a claim only if the reference expressly or inherently describes each and every element of the claim. See, M.P.E.P. § 2131; Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 2 USPQ2d 1051, 1053 (Fed Cir. 1987). The presently claimed polypeptides contain one, two, three, or four amino acid substitutions at residues 10, 11, 28, 32, and/or 33 of SEQ ID NO:1. In contrast, the chimeric protein C polypeptides disclosed by Hashimoto et al., Iwasaki et al., and Smirnov et al. are derived by replacing the human protein C Gla domain with a bovine protein C Gla domain, a factor X Gla domain, or a prothrombin Gla domain, respectively. In comparison to the Gla domain of human protein C, these different Gla domains contain amino acid substitutions at multiple residues in addition to the residues specified in the present claims. Nowhere does the Hashimoto et al. reference disclose a protein C or activated protein C polypeptide containing a Gla domain having the amino acid sequence of SEQ ID NO:1 with substitutions at one, two, three, or four positions selected from residues 10, 11, 28, 32, and 33. Similarly, the Iwasaki et al. reference and the Smirnov et al. reference also fail to teach or suggest such a polypeptide. Furthermore, neither Hashimoto et al., Iwasaki et al., nor Smirnov et al. teach or suggest any specific substitutions in the Gla domain of human protein C, let alone those recited in the present claims.

Accordingly, neither Hashimoto et al., Iwasaki et al., nor Smirnov et al. describes each and every element of the claims. Thus, none of the cited references anticipates the present invention. In light of the above, Applicant respectfully requests withdrawal of the rejections under 35 U.S.C. § 102(b) and 35 U.S.C. § 102(e).

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### CONCLUSION

Applicant respectfully requests allowance of claims 23-26, 28-33, and 43-55. The Examiner is invited to telephone the undersigned if such would further prosecution. Enclosed is a check for the Petition for Extension of Time fee. Please apply the additional claims fee and any other charges or credits to deposit account 06-1050.

Respectfully submitted,

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